ABSTRACT OF THE DISCLOSURE

Methods for allocating connections between nodes in an optical ring communications network are provided. In these methods, working path connections are assigned so that the combination of required wavelengths and wavelength interface cards (WICs) in the network is minimized. In one such method, the wavelengths for the working path connections are assigned so that lightpaths are connected around the ring to complete a circle. In another method, components of lightpaths are connected so that a linked component group of lightpaths is formed around the ring until no more connectable lightpath connections are available or until a complete circle is formed around the ring.